# USER MANUAL

**making everyday smoother**

airsuspension

• Increased comfort • Better driveability • More safety

## VB-FULLAIR

**COMMERCIAL VEHICLE - MOTORHOME**

**INFORMATION - MANUAL - SERVICE**

# Better safety and comfort on the road

## It's all under control with VB-Airsuspension systems


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## Basic information

### Vehicle information

Make and model: _____

Chassis number: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Kilometre reading at time of installation: _____ km

Kit number: _____

VB identification stickers:

*Kit sticker*

*Warranty sticker*

### Installation centre:

Name of installation centre: _____

Address: _____

Postcode/city: _____

Telephone: _____

Name of fitter: _____

Date of installation: _____

### Fitted options

- ☐ Extra control switch
- ☐ Emergency valve kit
- ☐ 'Extra time' module
- ☐ Manual operation via handbrake/speed-control *
- ☐ Remote control standard / basic / motorhome *
- ☐ VB-AutoLevel levelling function (VB-FA-4C only)
- ☐ VB-AATS, air tank for air suspension
- ☐ Air tank for external accessories
- ☐ VB-AOMS, axle overload monitoring system

* delete as applicable.

*“Air suspension systems from VB-Airsuspension – for greater comfort and optimum handling in all situations.”*

Dear customer,

Congratulations! Your vehicle is equipped with the fully automatic ‘VB-FullAir’ suspension system from VB-Airsuspension B.V.

This user manual tells you everything you need to know about how to use the air suspension system and how it works. It also includes some important safety precautions and operating instructions. In view of the many possibilities and options, the design of your system may differ from that described here and certain options may not be included. To see which options apply to your vehicle, refer to the ‘Basic information’ on page 3.

We wish you a pleasant ride!

VB-Airsuspension B.V.

## About this user manual

- Carefully read this user manual all the way through before using the vehicle. Otherwise, safe and error-free operation cannot be guaranteed.
- Observe all safety instructions and warnings in this user manual.
- This documentation is an integral part of the product and must be handed over to the purchaser if you sell the vehicle. Keep it with the vehicle documents.

### Meaning of symbols

Strict observance of the warnings may prevent personal injury and/or material damage.

Special instructions to aid clarity and ease of use.

## System overview

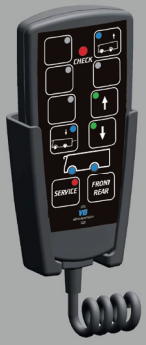
Your system is equipped with one of the fully automatic air suspension systems shown below.

### Commercial vehicle

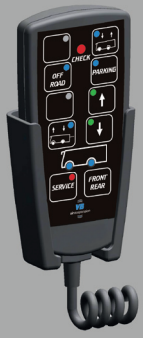
VB-FullAir-2C

VB-FullAir-4C

### Motorhome




VB-FullAir-2C




VB-FullAir-3C

VB-FullAir-4C

In view of the many possibilities and options, the design of your system may differ from that described here and certain options may not be included.

*“Read and follow all the safety instructions. This is important for your own safety.”*

## Product description

VB-FullAir is a fully automatic, electronically-controlled air suspension system for light commercial vehicles, motorhomes and special vehicles. The electronic control system ensures that the vehicle maintains the same ride-height in any load situation. The ride-height is controlled by height sensors mounted between the chassis and the axle. Height control is always active after switching on the ignition, or during “extra time” if this option is fitted.

- Manual operation for raising or lowering the vehicle can be activated in two ways - handbrake or speed signal. This depends on the option supplied to you.
- If the vehicle is equipped with the AutoLevel function, this function can be used to level the vehicle within the limits of the available suspension travel.
- The VB-Airsuspension system cannot prevent damage to the vehicle or superstructure due to overload.
- Always make sure the vehicle is not overloaded. When using the air suspension system, overloading is not visible. If you are in any doubt, VB-Airsuspension advises you to weigh the axles before driving the vehicle.

### Use

The VB-Airsuspension system improves the suspension and automatically controls the height of the chassis at the front and rear axles.

Improper use can have undesirable consequences. VB-Airsuspension is not liable for any resulting damage.

## Safety instructions

**Note:**
The built-in air suspension system must not be modified.

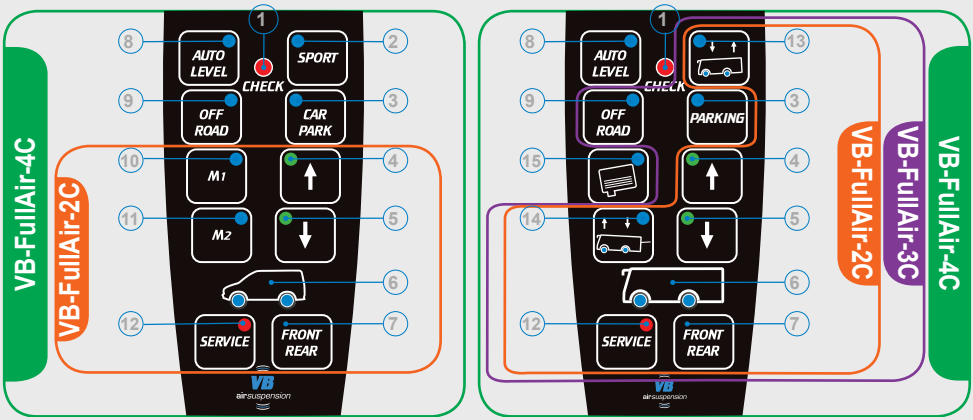
- Never drive the vehicle with a setting other than ride-height or SPORT, except with caution and at a speed not exceeding approximately 30 km/h. This is advisable to avoid damage to the chassis or the air suspension system.
- Before raising or lowering the vehicle when standing still:
  - Secure vehicle against rolling away.
  - Make sure there is no possibility of injury or damage to people and property.
- Do not depress the brake pedal (if it is possible) while raising or lowering the vehicle. This is advisable to relieve the brake and avoid tension in the chassis.
- Always use a jack or vehicle lift to change a wheel or carry out service work.
- Before raising one or more axles with a jack or vehicle lift, switch off the air suspension system by pressing the SERVICE button.
- The air suspension system must not be used to lift wheels from the ground during service work (to change a wheel for example).
- Errors and/or faults in the air suspension system can have an undesirable effect on driving stability. This may cause the vehicle to sway and/or swing.
- When using snow chains, do not allow the vehicle to fall below the ride-height.

**Risk of damage!**
In case of damage or faults that cannot be rectified, press this button to deactivate the system. Contact an approved VB-partner immediately. The check light comes on to indicate a fault. If this happens, drive extra carefully and at much lower speed.

Removing the fuses deactivates the system.

*"Your remote control may not include all functions. Use this guide to find out what you can do with your system."*

## Operation




Commercial Vehicle | Motorhome

| Button | | Summary | Speed |
|---|---|---|---|
| 1 | CHECK | Check light | |
| 2 | SPORT | Sport | > 0 km/h |
| 3 | CAR PARK | Car Park | < ± 30 km/h |
| | PARKING | Parking | < ± 30 km/h |
| 4 | | Vehicle height - up | < ± 5 km/h |
| 5 | | Vehicle height - down | < ± 5 km/h |
| 6 | SPORT | Display - selected axle | < ± 5 km/h |
| 7 | FRONT REAR | Front - Rear | < ± 5 km/h |

| Button | | Summary | Speed |
|---|---|---|---|
| 8 | AUTO LEVEL | AutoLevel | |
| 9 | OFF ROAD | OffRoad | < ± 5 km/h |
| 10 | M1 | Vehicle height 1 | < ± 5 km/h |
| 11 | M2 | Vehicle height 2 | < ± 5 km/h |
| 12 | SERVICE | Service | < ± 5 km/h |
| 13 | | Forward position | < ± 30 km/h |
| 14 | | Backward position | < ± 5 km/h |
| 15 | | Water tank | |

**Note:**
When raising or lowering, make sure there is enough space above, under and around the vehicle.

- The air suspension system is ready for use when you switch on the ignition.
- While driving, the control functions are limited or unavailable (see p. 8). In such situations, the safe ride height is controlled automatically.
- When raising or lowering with the handbrake on, tension or noises may occur in the vehicle. If you then release the handbrake, there may be unexpected, slight up-and-down movements.

## Starting the air suspension system

1. Switch on the air suspension system
   - The check light comes on for one second:
     *The system has started correctly.*
   - LED of the front and/or rear axle comes on:
     *The vehicle is at driving level.*
     *The height of the selected axle(s) can be adjusted.*
   - LEDs of the front and/or rear axle and a function button come on:
     *The selected level has been reached.*

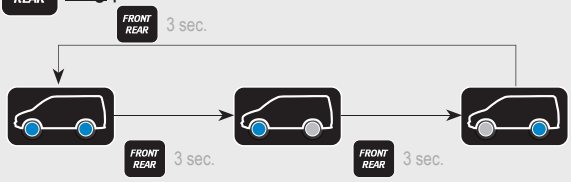
## ‘Selected axle’ display

One or both LEDs in the displayed vehicle show the axle(s) for which manual adjustment is enabled.

*"An extra control switch can be fitted - on the rear doors for example."*

## Commercial vehicle ride-height/axle selection

1. Switch on ignition, apply handbrake. Vehicle standing still or driving at < ± 5 km/h.
2. FRONT REAR short press: at vehicle height, one or both LEDs come on.
3. FRONT REAR long press: axle selection active.




## Raise commercial vehicle

1. Switch on ignition, apply handbrake. Vehicle standing still or driving at < ± 5 km/h.
2. Keep button pressed until the desired level is reached.
   - The button flashes during raising.
   - The button is lit continuously when the level is reached.

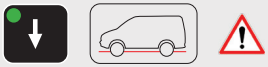
### Alternatively

1. Button short press. The vehicle is raised to the highest position.
   - The button flashes during raising.
   - The button is lit continuously when the highest level is reached.

### Ending the function

- Button - short press.
- Button FRONT REAR - long press.

## Lower commercial vehicle



1. Switch on ignition, apply handbrake. Vehicle standing still or driving at < ± 5 km/h.
2. Keep button ↓ pressed until the desired level is reached.
   - The button flashes during lowering.
   - The button is lit continuously when the level is reached.

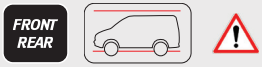
**Alternatively**

1. Button ↓ - short press. The vehicle is lowered to the lowest position.
   - The button flashes during lowering.
   - The button is lit continuously when the lowest level is reached.

**Ending the function**

- Button ↑ - short press.
- Button FRONT REAR - long press.

## Reset commercial vehicle to ride-height



- From unknown level:

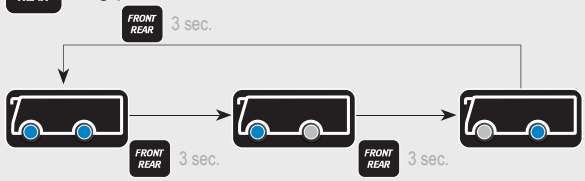
1. Button FRONT REAR - long press.

*Vehicle is brought to ride-height.*

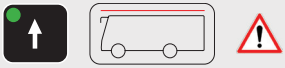
*"Lowering the vehicle can make it easier for people to get in and out, etc."*

## Motorhome ride-height/axle selection

1. Switch on ignition, apply handbrake. Vehicle standing still or driving at < ± 5 km/h.
2. FRONT REAR short press: at vehicle height, one or both LEDs come on.
3. FRONT REAR long press: axle selection active.




## Raise motorhome



1. Switch on ignition. Vehicle standing still or driving at < ± 5 km/h.
2. Keep button pressed until the desired level is reached.
   - The button flashes during raising.
   - The button is lit continuously when the level is reached.

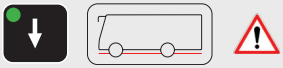
### Alternatively

1. Button - short press. The vehicle is raised to the highest position.
   - The button flashes during raising.
   - The button is lit continuously when the highest level is reached.

### Ending the function

- Button - short press.
- Button FRONT REAR - short press.

## Lower motorhome



1. Switch on ignition. Vehicle standing still or driving at < ± 5 km/h.
2. Keep button ↓ pressed until the desired level is reached.
   - The button flashes during lowering.
   - The button is lit continuously when the level is reached.

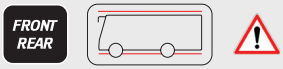
**Alternatively**

1. Button ↓ - short press. The vehicle is lowered to the lowest position.
   - The button flashes during lowering.
   - The button is lit continuously when the lowest level is reached.

**Ending the function**

- Button ↑ - short press.
- Button FRONT REAR - short press.

## Reset motorhome to ride-height



- From unknown level:

1. Button FRONT REAR - short press.

   *Vehicle is brought to ride-height.*

*"The AutoLevel function works best when the vehicle is parked on level ground."*

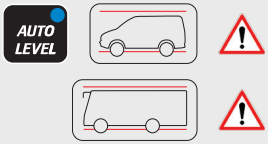
## Save level you have set

1. Switch on ignition. Vehicle standing still or driving at < ± 5 km/h.
2. Press button FRONT REAR to select the desired axle.
3. Press button ↑ or ↓ to set the desired level.
4. Keep button M1 or M2 pressed until a signal is given.

## Activate stored level

1. Switch on ignition. Vehicle standing still or driving at < ± 5 km/h.
2. Button M1 or M2 - short press.
   - The button flashes while the level is moved towards.
   - The button is lit continuously when the level has been reached.

## AutoLevel (spirit level)




This function can be used for 6 minutes after the ignition is switched off. During this period the vehicle uses the extra time (option).

With the AutoLevel option, the vehicle is set to a horizontal position (levelled) automatically. This is only possible if the vehicle is standing still and adequate suspension travel is available.

1. Switch on ignition
2. Switch off the ignition and within 6 minutes briefly press button AUTO LEVEL.
   - The button flashes during adjustment.
   - The button is lit continuously for 10 seconds as soon as the vehicle is in the optimum position.

The system then switches off.

**End function and reset vehicle to ride-height**

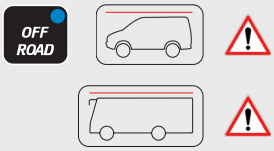
1. Switch on the ignition and press button AUTO LEVEL briefly.
   - As soon as buttons ↑ or ↓ are no longer lit, the vehicle is at driving level once more.

**Alternatively:**
After you drive away, the AutoLevel function automatically switches off. The vehicle is reset to ride-height.

However, VB-Airsuspension recommends that you reset the vehicle to ride-height before driving away, to give the suspension adequate time to return to ride height in order to minimise possible damage.

*"Your remote control may not include all functions. Find out what you can do."*

## OffRoad setting (high driving position)




Press button OFF ROAD to raise the whole vehicle.

This increases the ground clearance.

1. Switch on ignition. Vehicle standing still or driving at < ± 30 km/h.
2. Button OFF ROAD - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the level is reached.

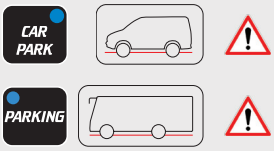
### End function and reset commercial vehicle to ride-height

1. Button OFF ROAD or FRONT REAR - long press.

### End function and reset motorhome to ride-height

1. Button OFF ROAD or FRONT REAR - short press.

## Parking (low driving position)




Press button PARKING to lower the whole vehicle.

To remind you, a bleeping sound can be heard while the vehicle remains in the low driving position.

1. Switch on ignition. Vehicle standing still or driving at < ± 30 km/h.
2. Button PARKING - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the level is reached.

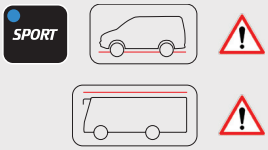
**End function and reset commercial vehicle to ride-height**

1. Button PARKING or FRONT REAR - long press.

**End function and reset motorhome to ride-height**

1. Button PARKING or FRONT REAR - short press.

## Sport




Press button SPORT to lower the whole vehicle while driving.

This provides greater stability at higher speeds.

1. Switch on ignition.
2. Button SPORT - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the level is reached.

**End function and reset commercial vehicle to ride-height**

1. Button SPORT or FRONT REAR - long press.

**End function and reset motorhome to ride-height**

1. Button SPORT or FRONT REAR - short press.

*"With the 'extra time' option, the air suspension system can be operated for up to one hour after the ignition is switched off."*

## Water tank

The button allows you to tilt the vehicle to the side.

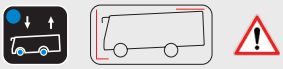
This makes it easier to empty wastewater tanks of vehicles.

1. Switch on the ignition, vehicle standing still.
2. Button - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the maximum tilt angle is reached.

**End function and reset motorhome to driving level**

1. Button - short press.

## Forward position



The button allows you to tilt the vehicle forwards.

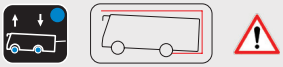
This can be useful if you need ground clearance at the back when manoeuvring.

1. Switch on ignition. Vehicle standing still or driving at < ± 30 km/h.
2. Button - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the level is reached.

**End function and reset motorhome to ride-height**

1. Button or

- short press.



## Backward position

The button allows you to tilt the vehicle backwards.

This can be useful for loading and unloading.

1. Switch on the ignition, vehicle standing still.
2. Button - short press.
   - The button flashes during adjustment.
   - The button is lit continuously when the level is reached.

### End function and reset motorhome to ride-height

1. Button or

- short press.

*"With the 'emergency valve kit' option, the air suspension system can be pressurised at any time (see page 22)."*

**Note:**
Does the vehicle have a tail-lift and/or levelling jacks?
Remember: If any of these systems are active at the same time as the air suspension system, the air suspension system must be switched off with the SERVICE button.

## Service

1. The SERVICE button has only one function:
   - Switching service mode on and off.

Service mode can be used to switch off the system in order to carry out work on the air suspension or read out possible faults. To guarantee total safety, we recommend you remove the fuses from the air suspension system.

### Switch service mode on and off

1.

Press once
   - The button is lit continuously.

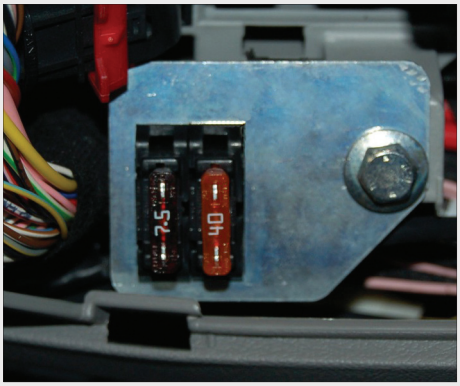
## Reset system

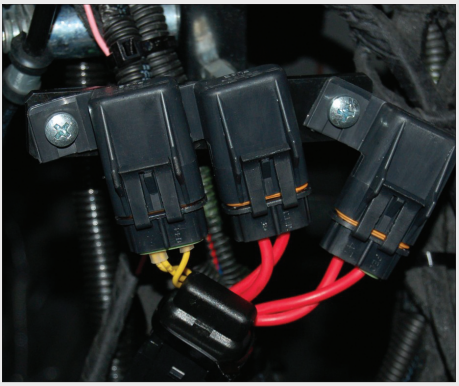
1. Switch the ignition off and on again.

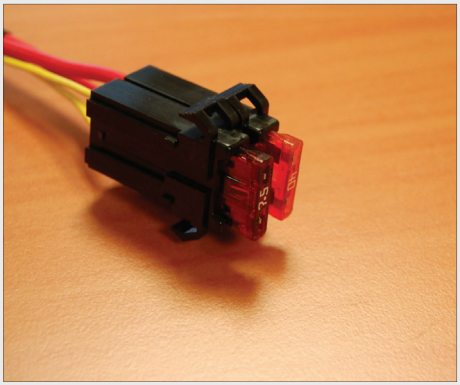
## Alternatively

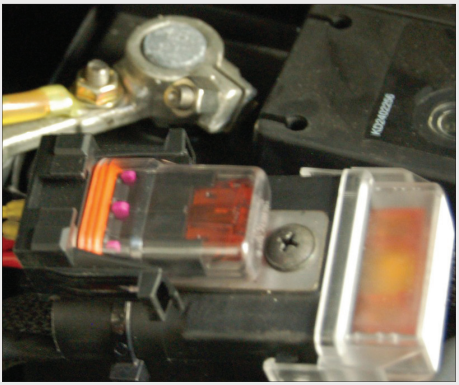
- Remove the fuse (7.5 A) from the fuse box. This is located in the dashboard or under the driver's seat.

7.5 A fuse – for the controller
40 A fuse – for the compressor







*"The constant ride-height of the vehicle reduces tyre wear and lowers fuel consumption."*

## Changing a wheel

**Risk of damage!**
Before raising one or more axles with a jack or vehicle lift, switch off the air suspension system by pressing the SERVICE button.

- The VB-Airsuspension system must not be used to lift wheels from the ground during service work.
- Always use a jack or vehicle lift to change a wheel or carry out other service work. Remove the 7.5 A fuse and replace it afterwards.

## Emergency inflation

In the engine compartment there are two inflation valves on a mounting plate. These are used to top up the system in case of emergency. If the air suspension system fails, the air spring can be pumped up manually.

**Working on the system can be dangerous!**
- Before carrying out emergency inflation, remove the fuses from the fuse box.
- Never inflate the air springs to a pressure of more than 8 bar.
- Consult your installation centre if necessary.

| | | | |
|---|---|---|---|
| a | Rear right (black) | c | Front right (red) |
| b | Rear left (green) | d | Front left (blue) |

The valves are arranged so that they can easily be matched to the correct side. The valves are also marked.

## Troubleshooting

- Malfunctions can be diagnosed with the table below. If you cannot correct the fault, contact your nearest accredited VB-Airsuspension workshop.
- In case of air loss, contact an authorised specialist workshop. If this happens, drive extra carefully and at much lower speed.
- Information about accredited VB-Airsuspension workshops and the spare parts you might need can be obtained from VB-Airsuspension Aftersales.

## Tracing faults

| Fault | Possible cause | Remedy |
|---|---|---|
| Vehicle is lopsided or low | Load was moved after the air suspension was switched off | Switch on the air suspension, lower the vehicle and reset the vehicle height |
| The remote control does not respond | Ignition switched off | Switch on ignition |
| | 7.5 A fuse faulty | Replace the 7.5 A fuse |
| | Battery voltage too low | Charge the battery |
| Compressor not working | Ignition switched off | Switch on ignition |
| | 40 A fuse faulty | Replace the 40 A fuse |
| | Battery voltage too low | Charge the battery |
| Compressor does not switch off | Compressor relay faulty | Remove 40 A relay |
| | Air loss | Consult workshop |
| Air suspension does not lower | Driving too fast | Stick to VB-ASCU speed limits |
| | 7.5 A fuse faulty | Replace the 7.5 A fuse |
| Air suspension does not raise | Vehicle overloaded | Reduce load |
| | Driving too fast | Stick to VB-ASCU speed limits (see p.8). |
| | 7.5 A fuse faulty | Replace the 7.5 A fuse |

*"Is the fault not mentioned here? Contact your installation centre (see page 3)."*

In case of faults that are not mentioned in this table or that you cannot rectify yourself, contact a trained partner of VB-Airsuspension.

## Basic remote control

In some vehicles the air suspension system is equipped with a 'basic remote control'. This remote control has three fixed modes: highest position, ride-height and lowest position.

### Check light

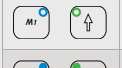
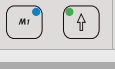
1. Activate manual operation:
   - The check light comes on for one second:
     *The system has started correctly.*
   - The check light remains lit:
     *The vehicle is not at ride-height.*
   - The check light keeps flashing:
     *The system detects a fault (see error code for solution).*

### Switch

1. Activate manual operation:
   - From highest position, press switch briefly downwards:
     *Vehicle sets itself to ride-height automatically.*
   - From lowest position, press switch briefly upwards:
     *Vehicle sets itself to ride-height automatically.*
   - From ride-height, press switch briefly downwards:
     *Vehicle sets itself to the lowest position.*
   - From ride-height, press switch briefly upwards:
     *Vehicle sets itself to the highest position.*

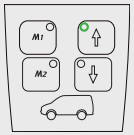
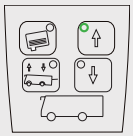
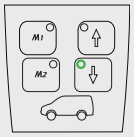
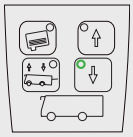
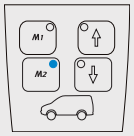
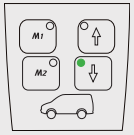
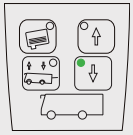
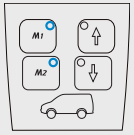
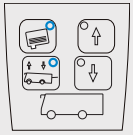
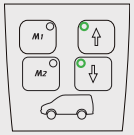
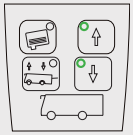
## Error code

If the system detects a fault, the CHECK-LED on the remote control flashes. If you then press the SERVICE button, a combination of lit and flashing LEDs on the various buttons provides an error code.

| | |
|---|---|
| | LEDs on the buttons are off |
|  | LEDs on the buttons are flashing |
|  | LEDs on the buttons are lit |

Below are the possible error codes and the faults they refer to.

In view of the many possibilities and options, your remote control may differ from the example. However, the error codes are the same in all cases.

| Commercial vehicle | Motorhome | Basic | Description of fault | Remedy |
|---|---|---|---|---|
|  |  | (2) | Compressor used too intensively. Thermal cutout. | Allow compressor to cool down. |
| | | | | Contact your installation centre if the fault keeps coming back. |
|  |  | (2) | Valve block used too intensively. Thermal cutout. | Allow valve block to cool down. |
| | | | | Contact your installation centre if the fault keeps coming back. |
|  | | (4) | Maximum permitted load exceeded. | Reduce load. |
|  |  | (4) | Compressor's maximum working pressure reached. | Reduce load. |
|  |  | (5) | Battery voltage too low to raise the air suspension. | Start the vehicle's engine. |
|  |  | (5) | Battery voltage too low. | Charge the vehicle's battery. |

*"Maintaining your vehicle correctly reduces the likelihood of wear and faults."*

## Correcting malfunctions

To clear a fault, turn the ignition on and off again. The fault is now cleared. Contact your installation centre if the fault keeps recurring.

In case of faults that are not mentioned in this table or that you cannot rectify yourself, contact your installation centre or a trained partner of VB-Airsuspension.

## Maintenance

VB-Airsuspension systems are low maintenance. However, regular cleaning and visual inspections will help to reduce natural wear.

The following components must be checked for wear, leaks and damage during servicing:

- Air springs
- Air tubes
- Shock absorbers

The level of the vehicle may fall gradually if it is not used for long periods. To avoid permanent deformation and damage to the air springs:

- The vehicle should be supported with corner steadies (accessories).
- The air springs should be re-inflated with compressed air once a week.

**Permitted cleaning agents:**

- Soap solution
- Ethanol
- Methanol
- Isopropyl alcohol

**Not permitted:**

- Organic solvents
- Abrasives
- Steam and high-pressure cleaners
- Naked flames

## Servicing

Service inspections can be entered below. This allows you to see when the system was inspected and whether repairs were carried out.

- Ask your conversion station to enter the information relating to service inspections.

| | |
|---|---|
| Date: ____ - _____ - _____ | Stamp: |
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

| | |
|---|---|
| Date: ____ - _____ - _____ | Stamp: |
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

| | |
|---|---|
| Date: ____ - _____ - _____ | Stamp: |
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

*“Keep a record of all service inspections. This gives an optimum overview of the vehicle.”*

| Date: ____ - _____ - _____ | Stamp: |
|---|---|
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

| Date: ____ - _____ - _____ | Stamp: |
|---|---|
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

| Date: ____ - _____ - _____ | Stamp: |
|---|---|
| Kilometre reading: _____ km. | |
| Work carried out:<br>_____<br>_____<br>_____ | |

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VB-Airsuspension B.V. is constantly working to develop its products. We trust you will understand that, for this reason, the scope of delivery, the design, the functionality and the technology may vary. The content of this manual is a snapshot view of the situation as at the time it was written. VB-Airsuspension reserves the right to introduce technical changes at any time without warning.

The design of the air suspension system takes into account the maximum permitted weight of the vehicle. Because the vehicle always adjusts to ride-height regardless of load, overloading is less visible. The chance of overloading is therefore greater. Never overload the vehicle, as the suspension system and other components of the vehicle may be damaged as a result. Weigh the vehicle if you are not sure whether it is overloaded. No compensation will be payable for damage caused by overloading.

If the suspension system develops a fault, it is inadvisable to continue driving in view of the damage that may result. In exceptional cases, it is possible to continue driving at reduced speed and taking suitable precautions.

*"You may contact us at any time if you have questions or if anything is unclear. Send an e-mail to info@vbairsuspension.com."*

**Notes**

**Notes**

VB-Airsuspension is producing, as one of the few European manufacturers, a very broad range of different (air)-suspension systems. From reinforced coil springs, semi-air-suspension systems, up to complete full air-suspension systems, we provide solutions for customers with different vehicle types, like ambulances, minibuses, car transporters, motorhomes, etc. Now you can see why more and more commercial vehicle body manufacturers specify VB-Airsuspension on their vehicles.

Dealer:

VB airsuspension

www.vbairsuspension.com

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